Combination of Gravitational and Magnetic Lensing, Coulomb-Diffusion Scattering, and Neutrino Energy Transfer Between Signal EM and Noise EM Rules Out Any Possibility of Detection of Coherent Extraterrestrial Electromagnetic Signals

Introduction

In the interest of preventing further monetary waste on the SETI initiative, I now endeavor to persuasively convince the scientific community of the full extent of the difficulties that even relatively powerful amplitude-modulated signals would face during a journey of just a few hundred lightyears from a planet in orbit around its star.

Abstract

Although the most obvious challenge of successfully relaying an interstellar signal lies in overpowering the interference generated by the multi-spectral emissions of stars, other challenges that may not have been considered by astrophysicists who may consider themselves proponents of the SETI initiative ought to consider some further, unpondered complications that would likely further frustrate efforts toward detecting even the most powerful deliberately-emitted messages from an alien world.

Carl Sagan notably suggested that the failure to detect signals from an alien world may indicate that it is the fate of all civilizations to destroy themselves prior to, "Growing out of their technological adolescence." While Sagan's warning of the dangers of nuclear war were certainly beneficent and shrewd, there is no scientific rationale for jumping to such a conclusion. A much more likely explanation for our continued failure to detect interstellar radio signals of an artificial nature lies in the interaction of such emissions with at least three different contrary influences that would not only reduce the chances of receiving an intact signal, but as I will explain, completely prohibits the delivery of an intact signal.

The first and most important of these influences are the stellar emissions as a whole, which, at any given frequency one may wish to monitor for an extraterrestrial signal, emit radiation that far exceeds the amplitude of any artificial signal likely to be generated. We have never sent a probe far enough into deep space to ascertain the extent to which signals from the Earth are scattered at each increment of distance between our solar system and our nearest neighbor. As a concept, the viability of delivering a message over a distance of multiple lightyears is entirely unproven. In fact, in 2022, signals from the Voyager probe began arriving in a garbled state not consistent with any internal fault expected by NASA. It is highly probable, in my view, that these garbled signals result from interaction between outgoing EM from the Sun and Voyager's transmissions. At the time of the disruption, the probe was merely 14 billion miles from Earth. If a signal moving toward Earth without a great deal of noise in its "background" would fail to travel a fraction of a light year without corruption, there would seem to be little chance that a signal could arrive intact after traveling multiple lightyears.

Beyond the simple issue of signal-to-noise ratio, two other important forces

come into play. One is the magnetic field of the star, which has a lensing effect that could distort and redirect a signal and the other is the combination of the magnetic and Coulomb forces associated with the EM emitted from the stars in question. The extent of the signal interference is equal to the product of the sum of the scattering effects and the distance over which those influences can interact with the signal, which is presumably hundreds if not thousands of lightyears.

The Coulomb scattering alone would likely be sufficient to scramble any signal given that this force is the same force responsible for the ability of simple white light to strike behind covered areas in the "Double-Slit Experiment." A single photon will travel in a straight line in a vacuum, but if additional photons are introduced, their mutual repulsion can cause scattering even over a short distance.

Another force that comes into play is gravitational lensing, which although subtle, not only bends EM around a massive object, but I would suggest must act as a multiplier of EM scattering given the effect of gravity fields on the spin orientation of electrons relative to their phase. Aside from the distance and time during which a signal must interact with a noise in terms of magnetism, Coulomb repulsion, and gravity, in this undocumented effect may lie the most important proof of the implausibility of a signal successfully transiting interstellar space intact.

EM emitted from a planet orbiting a star would not only tend to divert toward the "center of the stream," but if we visualize the emissions of the star as water flowing through a river and the artificial signal as a ripple emitted from the periphery of the stream, that artificial ripple would, in addition to tending to blend into the overall stream, also tend toward a faster rate of energetic dissipation through neutrino flux independent of phase cancellations. Large bodies of electromagnetism moving through space, much as electrons in higher energy orbits around atoms, tend to sap neutrino energy from electrons near the periphery.

In an atom, the valence electron is far more likely to be depleted than a so-called high-energy electron in a lower orbit. I have written about this effect in previous publications and scientists have recently confirmed, perhaps unwittingly, its verisimilitude in research done in the area of using excitons to transport electrical energy between stationary electrons without any flow of electrons. It is no longer a mere hypothesis that a more granular phylum of electricity can flow between electrons. It is a fact (see Indium-Tin-Zinc-Oxide.)

Weakening electromagnetism will tend to curve in the direction of higher gravity as it exits a star system. With each quantum of energy sapped from an electron in such a scenario, its phase height relative to wavelength is reduced. With each such reduction in phase height, the failure of the electrons to achieve their full height results in a change in their angular momentum. This amounts to a lensing effect.

Thus, we have at least two lensing effects at work on top of a natural scattering effect. In order to prove that it would be truly impossible for a coherent signal to make the journey between two stars, a computer simulation

that properly accounts for these lensing effects should be run to track what happens to EM as it exits a solar system.

A metaphor in optics for these effects is the use of four lenses, as seen in the posted image, in order to cloak an object in the center of the four lenses. Although the dynamics at play are slightly different, the net result is the same. Any signal emitted from within a certain range of a star (aside from emissions from the star itself which are in and of themselves altered if visible,) would be fully scattered, canceled, redirected, or overpowered so that an observer in a distant solar system would never receive the signal.

Conclusion

If the Voyager probe is any indication, we would also need to take into consideration the scattering effect of our own solar emissions on incoming electromagnetism. When considering that scattering/lensing effects in multiple dimensions come into play, at minimum, two times (interstellar radiation notwithstanding,) if we wish to identify signs of extraterrestrial life, we need to stop pursuing radio or optical signals as viable avenues of research. Existing radio telescopes may remain useful for helping to keep in touch with space probes within our star system or studying stellar-level phenomena, but further dedication of telescope time for SETI applications would be a waste of resources given the impossibility of EM escaping a manifold lensing system.